



Gage Schlice
Fire Marshal

CITY OF SAN BRUNO
FIRE DEPARTMENT

Car Stacker and Car Puzzler Systems

Effective June 01, 2021

Car Stackers and Car Puzzler Systems. Car stackers and car puzzler systems are defined as manual, or automatic, rack vehicle storage systems designed to park cars vertically and/or horizontally inside structures or under canopies such that the vehicles are in close proximity to one another with limited access for firefighters. The configuration of the vehicles stored in these systems presents an exposure hazard from one vehicle to another in the event of a vehicle fire.

Parking areas inside buildings or under attached canopies equipped with car stackers or car puzzler systems shall be protected from above by an automatic fire sprinkler system designed to a density of Extra Hazard Group 2. Standard coverage sidewall sprinklers listed for Ordinary Hazard Group 2 shall be provided to protect each parking level, including the bottom levels. The maximum coverage of a sidewall sprinkler is 80 sq. ft. and the use of extended coverage sidewall heads for protection is prohibited.

The basic design area of application for the increased density fire sprinkler system protecting the car stacker or car puzzler systems shall be 2,500 square feet. The design area of application may be reduced upon approval by the fire code official but never less than 1,500 square feet if one-hour rated walls are provided between the stacker parking area and other standard parking stalls or storage areas, and the car stacker system is divided into a maximum of 1,000 square foot fire areas by one-hour rated fire barriers. Flow from all fire sprinkler heads, upright, pendant, and sidewall, at all levels, located in the design area of application, shall be included in the hydraulic calculations for the fire sprinkler system.

Car stackers and car puzzler systems installed inside structures or under attached canopies shall be provided with Manual Wet or Automatic Wet Standpipe connections at all points of access and at each parking level within the structure so that every part of the parking area is within 150 feet by hose pull of a standpipe connection.

Car stackers and car puzzler systems installed inside structures shall be provided with a mechanical smoke and heat removal system as per Section 910.4 of the California Fire Code. The smoke and heat removal system shall be automatically activated upon detection of fire by the fire alarm system. Section 910.4.4 does not apply to this requirement.

Car stacker and car puzzler systems installed outside structures that are open to the environment shall be configured so as to limit fire spread from one vehicle to another and from vehicles to adjacent structures. This shall be accomplished with one-hour fire-rated barriers creating a maximum of 2500 square foot fire areas between stackers or puzzlers and by providing adequate setback from adjacent structures.

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